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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/510,781 | 10/12/2004 | Aik Seng Yak | SG 020008 | 4094 |

24737 7590 03/13/2006

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER

JONES, CRYSTAL L

ART UNIT PAPER NUMBER

2656

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/510,781 | YAK ET AL. | |
| | Examiner | Art Unit | |
| | Crystal Jones | 2656 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Drawings

1. Figures 3A and 3B should be designated by a legend such as --Prior Art--because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Optical Disc Drive And Servo Controller For Controlling A Focus Actuator.

3. The disclosure is objected to because of the following informalities: reference character "30" has been used to designate multiple elements: an optical displacement actuator (Abstract, line 2), a focus actuator (Abstract, line 3), an optical lens actuator (Page 8, line 4), and an optical lens system actuator (Page 8, lines 15 and 16).

Appropriate correction is required.

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
DEVELOPMENT.

(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT

(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer
program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),
and tables having more than 50 pages of text are permitted to be
submitted on compact discs.)

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).

"Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37
CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A

“Sequence Listing” is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required “Sequence Listing” is not submitted as an electronic document on compact disc).

~~Claim Rejections - 35 USC § 102~~

5. Claim 7 recites the limitation "the offset signal" in line 3, hence objected to. There is insufficient antecedent basis for these limitations in the above claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Choi (U.S. Patent 6,252,835).

Regarding claim 1, Choi discloses a servo controller (Fig. 5) for controlling a focus actuator (Fig. 5, see arrow “To Motor Drive”) in an optical pickup for an optical disc drive; the controller comprising signal inputs for receiving respective detector signals

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from a photo-detector of such an optical pickup; wherein the servo controller is adapted to process the signals received at its inputs to produce a focal error signal which is zero if the signals at the inputs represent the situation of a focussed beam incident on the center of such a photo-detector (when focus error signal, $FE=0$ there is no focus error and the situation of a focused beam is achieved) ; the servo controller further being adapted to subtract an offset parameter from said focal error signal, and to provide the difference as a control output signal; or, alternatively, the servo controller further being adapted to add an offset parameter to said focal error signal, and to provide the sum as a control output signal (see Fig. 6, step S605; offset parameter is subtracted or added).

Regarding claim 2, Choi discloses a servo controller according to claim 1, adapted for receiving respective detector signals from a 4-quadrant photo-detector of an optical pickup (see Fig. 3, element 26); wherein the servo controller is adapted to produce a focal error signal which is zero if the signals at the four inputs all have identical magnitude (Col. 2, lines 34-37; the focal error signal $FE=(A+C)-(B+D)$; if $A=B=C=D \rightarrow FE=0$).

Regarding claim 3, Choi discloses a servo controller according to claim 2, adapted to calculate the focal error signal according to the formula $FE=SA+SB$, wherein SA is proportional to the difference between the input signals received at the first and second inputs, and wherein SB is proportional to the difference between the signals received at the third and fourth inputs (see Col. 2, lines 34-37; the equation for FE can be manipulated as such: $FE=A+C-B-D=(A-B)+(C-D)$. If $(A-B)=SA$ of the above equation and $(C-D)=SB$, FE can be simplified to $FE=SA+SB$).

Regarding claim 4, Choi discloses a servo controller according to claim 1, adapted to perform a calibration procedure calculating an operative value for the offset parameter on start up of the servo controller, and to maintain the offset parameter constant during operation (switch SW of Fig. 5 is turned off once calibration procedure is complete, thereby ensuring a constant offset parameter during operation; see Fig. 6, S612).

Regarding claim 5, Choi discloses a servo controller according to claim 4, adapted to monitor, during said calibration procedure, a parameter derivable from the input signals received at the inputs and indicative of photo-detector output signal quality (Fig. 6, element fo); to stepwise change the value of the offset parameter (Fig. 6, S605) and to measure the corresponding value of said parameter (Fig. 6, S607); and to set the operative value for the offset parameter as the value corresponding to the best value of the said parameter (Fig. 6, S612).

Regarding claim 6, Choi discloses a servo controller according to claim 4, adapted to monitor, during said calibration procedure, a parameter derivable from the input signals received at the inputs and indicative of photo-detector output signal quality (Fig. 6, element fo); to stepwise change the value of the offset parameter until the offset parameter reaches a value $\Phi(n)_{MAX}$ (Fig. 6, see S611; stepwise change continues until n is no longer within a predetermined value) where the value of said parameter reaches a predetermined threshold value (Fig. 7; threshold value is n); to stepwise change the offset value into the other direction until the offset parameter reaches a value $\Phi(n)_{MIN}$ where the value of said parameter reaches the same threshold value (Fig. 7; note points

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a and b); and to calculate the operative value of the offset parameter as $[\Phi(n)_{MAX} + \Phi(n)_{MIN}]/2$ (see Fig. 7; operative value is $[a+b]/2$).

Regarding claim 8, Choi discloses an optical pickup (Fig. 2) for an optical disc drive comprising: a photo-detector (Fig. 2, element 26); an objective lens mounted displaceably with respect to the photo-detector (Fig. 2, element 25); an optical displacement actuator for displacing the objective lens (Fig. 1, element 11); a servo controller (Fig. 1, element 9) according to any one of the previous claims, receiving an output signal from the photo-detector as input signal (see Fig. 1; signals are generated from element 2 are input to elements 7 and 8 and are thereby input into the servo controller, 9), and generating a control signal for controlling the actuator on the basis of said photo-detector output signal (see Fig. 1; signals are output from the servo controller, 9, into the motor drive, 10, which controls the slide motor, 11).

Regarding claim 9, Choi discloses an optical disc drive, for optically reading information from an optical disc (Fig. 1, element 1) and/or writing optical information into an optical disc, comprising an optical pickup according to claim 8 (see Col. 1, lines 25-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choi in view of Maezawa (U.S. Patent 5,748,584).

Regarding claim 7, Choi fails to disclose a servo controller further comprising an offset input for receiving the offset signal. However, Maezawa discloses a servo controller according to claim 1, further comprising an offset input (Fig. 1, element 22; signals require manual input, see Col. 2, lines 55-58) for receiving the offset signal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Choi with that of an offset input to achieve an offset adjustment device manually adjusted by volume, as suggested by Maezawa.

Motivation for such combination is to achieve an offset parameter easily adjustable by an operator (Maezawa, Col. 3, lines 2-7).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tsutsui et al. (U.S. Patent 5,751,675) and Fennema et al (U.S. Patent 5,164,932).

Tsutsui et al. disclose a recording/reproduction apparatus in which a focus offset is generated and calibrated but does not disclose a 4-quadrant photo-detector for generating respective detector signals.

Fennema et al. disclose a focus offset generating system in which a focus offset is calibrated and a 4-quadrant photo-detector for generating respective detector signals but discloses a calibration method unlike the claimed procedure.


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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal Jones whose telephone number is 571-272-2849. The examiner can normally be reached on Monday through Thursday and alternating Fridays, 8:30 a.m. to 6 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJ



WAYNE YOUNG
SUPERVISORY PATENT EXAMINER